

2009 Alaska Agriculture Innovation Grant Report

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From:

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We are off the power grid and running a generator all summer for fans and water in our greenhouses and cold frames has not been cost effective to grow vegetables for the local market especially with recent fuel price increases.

Our goal was to:

- a. Increase our production capability in order to provide vegetables to local markets.
- b. Reduce our carbon footprint by decreasing the use of fuel oil during the summer vegetable production season enough to make it cost effective.
- c. Increase plant quality and reduce disease problems.
- e. Extend the growing season.

Plan: Install roll up curtains on our greenhouses and drop down curtains on our cold frames for ventilation without using our generator.

Implementation: The roll up system was planned for our greenhouses because of the snow load preventing using a drop down system before the snow melts. We had problems installing the drop down system. Our hand made bowed arches had variables up to 5" caused a gap that could not be sealed to keep the heat in. We shimmed out the bows to solve that problem but discovered that the pulley system could not completely close the plastic. This again was due to the variabilities in our hand made arches. The problem continued when the cable started stretching. And kept stretching after each time we tightened it. A metal commercial structure would probably work for this system.

I ordered the extra materials needed to complete a drop down system for the greenhouses. The drop down system worked for all our structures; hand made and commercially manufactured but at a greater extra cost in materials than was planned.

Results:

Our generator time for running circulating and exhaust fans June, July and August was not needed. The generator was run only for watering. A savings on generator fuel was 80%. When we change our well pump to a soft start and we will be able to eliminate using our generator except on very cloudy days if watering is needed.

The improved air circulation in the cold frames and greenhouses eliminated nearly all mold and other disease problems I've had in the past on tomatoes, squash, green beans, cucumbers and herbs.. Beginning mid April I was able to turn off the generator on warm days 6 to 12 hours in the greenhouse.

The yield and quality of squash, herbs, green beans, collards and mustard greens grown in the field was poor to none while the yield and quality of crops grown in the cold frames was the highest I've had.

Harvest dates were 1.5 weeks earlier and 2 weeks later in the cold frames than the field grown crops..

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We were able produce enough crops for 18 CSA members, a small farmers market and some deliveries to a local restaurant. With the reduced costs in fuel we were able to make growing vegetables cost effective. The addition of a soft start well pump will eliminate most fuel consumption.